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Using Facebook as a Supplementary Tool in Education: Its' Effectiveness in Comparison to Traditional Instruction

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Abstract

The purpose of this quasi experimental study is to examine the effectiveness of Facebook in terms of pre-service teachers' attitudes, achievements and satisfactions in comparison to traditional instruction. The sample consisted of 96 pre-service teachers studying at a public university in Turkey. Attitudes towards teaching profession scale, course satisfaction scale and students' course grades were used as data gathering tools. One-Way ANCOVA and two t tests were used as data analysis method. The analysis showed that there were no significant differences in terms of attitudes, achievement and satisfaction between those who used facebook and who did not. The findings suggest that Facebook did not have a significant effect on pre service teachers' attitudes, achievement and satisfaction.

Keywords: social networking site, facebook, attitude, achievement, satisfaction.

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1. Introduction

The term Social Networking Sites (SNS) refers to virtual spaces where individuals gather to present themselves and establish or maintain connections with others (Ellison, Steinfield & Lampe, 2007). Among all SNSs, Facebook is the most popular one. As of December 2012, there are more than one billion people who spend a considerable amount of time on Facebook. Also 680 million monthly active users connect Facebook by their mobile phones (Facebook, 2012). The literature showed that the vast majority of Facebook users are college students (Stutzman, 2006; Roblyer, McDaniel, Webb, Herman & Witty, 2010). Pempek, Yermolayeva and Calvert (2009) noted that Facebook is a part of student's life with the usage frequency of approximately 30 minutes each day regardless of how busy they are. Furthermore, Roblyer et al. (2010) found that while faculty members often tend to use e-mail for the purpose of communication, college students are more likely to use Facebook. Statistics show that 41.65 % of population from Turkey is on Facebook and the majority of the users are aged 18-24 years (Socialbakers, 2013).

The effectiveness of a Technology Enhanced Learning Environment is specified by the technological, pedagogical and social affordances offered by that environment (Wang, Woo, Quek, Yang & Liu, 2012; Kirschner, Strijbos, Kreijns & Beers, 2004; Wang, 2008). Having so many user friendly applications, Facebook could be used as a learning management system (Jacobs, 2008). Previous computer mediated communication technologies such as email, chat rooms, and bulletin boards are all available on Facebook. Creating social bonds between students, teachers, parents and classmates, Facebook could be utilized to inform students about assignments, announcements and class activities. It could also be used to inform parents about what is going on school (Einspar, 2010). Due to the factors given above, educators believe that Facebook may have a place within teaching and learning processes (Munoz & Towner, 2009; Lockyer & Patterson, 2008; Bosch, 2009). Mazer, Murphy and Simonds, (2007) found that students who visited teachers Facebook page with high self-disclosure would perceive higher level of motivation, affective learning and a more positive classroom climate. Roblyer et al. (2010) noted that Facebook has the potential to become a valuable resource for promoting communications and collaboration between faculty members and college students. Similarly, in a study Ophus and Abbitt (2009) found that college students thought that social networking could be used as an educational tool. The major theme most of the students agreed with was that they could use social networks to communicate with other students enrolled in the course. Likewise, in a virtual ethnography study conducted with undergraduate students and lecturers, Bosch (2009) reported that students used Facebook to clarify course related issues like assignments, projects, and lecture notes. Also students reported that they were already spending lots of time on Facebook and felt to be welcomed using Facebook for academic purposes in addition to social. One of the lecturers participated to study reported that she found Facebook as an easier and quicker way to talk to people whom she saw on Facebook daily rather than to look for them in a class.

Educational usage of Social Networking Sites for teacher education was also discussed in the literature (Munoz & Towner, 2009; Voithofer, 2007; Ozkan & McKenzie, 2008). Russell, Bebell, O'Dwyer and O'Connor (2003) argued that teachers who are familiar with technological mediums and engaged with those technologies are more likely to use those new technologies in their classroom activities. According to Munoz & Towner (2009) using Facebook by pre-service teachers will help them benefit from such technological environments in their own class and model what they used before. Voithofer (2007) argues that using social networking in teacher education makes students understand: "(1) the technical and pedagogical characteristics of educational technology, (2) the social aspects of educational technology, (3) how to think about emerging technologies in relation to teaching" (p.11). Furthermore Ozkan and McKenzie (2008) stated that Social Networking Sites are becoming an important part of K-12 information literacy. Therefore, it is essential for teacher educators and pre-service teachers to understand and use social networking and criticize 'social' aspects of such networks.

According to many theorists, learning is a social process and occurs with the interaction of the individuals sharing information with each other (Bruner, 1996; Vygotsky, 1978). Wenger (1998) stated that while social participation is not a prerequisite for learning, much of the learning occur through social interaction among students, fellows or friends in a workplace. Mason (2006) stated that the value of most of the learning environments is dependent on the communication tools which have the potential to create, hold and distribute the knowledge in many ways. In their article Johnson and Johnson (1984) pointed out the importance of student- student interaction in a traditional classroom which was neglected by educators most of the time. They pointed out the importance of building communication patterns for students to learn effectively, obtain positive attitudes toward courses and have good relationships in their future workplace. School administrators believe that social networking also promotes achievement (Violino, 2009). Baldwin, Bedell and Johnson (1997) also studied the effects of social networks and network relationships on students' achievement, attitudinal beliefs and satisfaction. They noted that, the dominant view in the literature is that regardless of the instruction or course work, peer interaction significantly increases student's achievement, attitudinal beliefs and satisfaction.

Since social networking systems have the power to bring people together and have advanced communication tools, these sites could be used for academic purposes by fostering cooperation, collaboration in the traditional class (Ajjan & Hartshorne, 2008). Social networks are already the second nature for many students; our challenge is to apply it to education effectively (Horizon Report, 2007). Most of the studies conducted about Facebook focused networks, networks structure and privacy issues (Boyd & Ellison, 2007). There are few studies concerning about the effectiveness of Facebook as an educational environment. Bearing in mind, the current paper aims to examine the effectiveness of Facebook environment by examining the course satisfaction, attitude and achievement. The research problems that guided the study are as follows:

1. Will Facebook have an influence on pre-service teachers' attitudes towards teaching profession?
2. Is there a significant mean difference between experimental (Facebook) and control groups (no Facebook) in course satisfaction scores at the end of the experiment?
3. Is there a significant mean difference between experimental (exposed to Facebook) and control groups (exposed to traditional instruction) in course achievement score at the end of the experiment?

2. Material and methods

Pre-test post-test quasi experimental design was utilized for the study. The dependent variables were attitudes towards teaching profession, course satisfaction scores and achievement scores. The independent variable was treatment (integrating and not integrating Facebook). The design of the study was shown in Table 1.

Table 1. Design of the Study

Group	Pre- Test	Treatment	Post-Test
Control Group	Attitude Scale	Face to Face Course	Attitude Scale Achievement Score Satisfaction Form
Experimental Group	Attitude Scale	Facebook Enhanced Face to Face Course	Attitude Scale Achievement Score Satisfaction Form

1.1. Participants

Participants were pre-service early childhood teachers taking the course "Introduction to the Educational Science" in a public university in Turkey. A total of 96 students registered to the course at the beginning of the study. There were two groups taking the course. One of them was assigned as control group and the other was assigned as experimental group randomly. The experimental and control groups consisted of 51 and 45 subjects respectively.

2.2. The design of the course

Based on the aim of the study, a Facebook group was created by the instructor. The access of the course was restricted to those who belonged to experimental group to prevent the experimental and control groups from any interaction that could occur between them. The nature of the Facebook course was designed in line with the course syllabus. In the course "Introduction to Educational Science" some of the learning outcomes of the course were recognizing basic concepts of education and the attributes of teacher education, explaining construction and operation of Turkish National Education System and understanding teaching profession and the qualifications of the teachers (ECTS Info Package, 2013). In the Facebook group course related announcements, notes and other interesting materials related to their teaching professions were shared. Online group discussions were also conducted on various topics covered in the course syllabus (see Fig. 1).

Figure 1. Activities on Facebook

2.3. Data gathering tools

Attitude towards teaching profession scale, course satisfaction scale and students final grades were used as data measurement tools. The detailed explanations of the tools were given in the following sections.

2.3.1. Attitude towards teaching profession scale

The scale which was developed by Aşkar and Erden (1997) consisted of 10 questions. Each item was rated on five points likert type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The higher scores indicated that students had higher attitudes towards teaching profession. The original cronbach alpha coefficient value of the scale was 0.82. For the current study the reliability value was calculated as 0.77.

2.3.2. Course satisfaction scale

The course satisfaction scale was developed by Delialioglu and Yildirim (2007) which aimed to measure students' satisfaction levels in a hybrid course environment. The scale consisted of 13 questions. Each item was rated on five points likert type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The original scale had a reliability value of 0.91. For the current study the reliability value was found to be high with a value of 0.87.

2.3.3. Achievement score

Although interpreting final scores as the performance score is regarded as unreliable in the literature, it does convey practical meaning for measuring academic success (Puzziferro, 2008). For this reason, Students' final grades at the end of the semester were taken as students' achievement score.

3. Results

2.4. The influence on pre-service teachers' attitudes towards teaching profession.

Students' attitudes towards teaching profession before beginning the treatment were considered as covariate and the effect of it was controlled for both of groups. Hence, to examine the mean differences in attitude towards teaching profession between control (those who were not exposed to Facebook) and experimental group (those who were exposed to Facebook) ANCOVA was used. The preliminary analysis evaluating the homogeneity of the slopes showed that the dependent variable (post- attitude scores) did not differ significantly as a function of the interaction between independent variable (group) and covariate (pre-attitude scores), F (1, 92) = .33, p = .57. Normality, linearity and homogeneity of variances assumptions were also satisfactory. The results of the ANCOVA were presented in Table 2.

Table 2. Pre-Service Teachers' Attitudes Towards Teaching Profession Between Experimental And Control Groups

	SS	*df*	*MS*	*F*
Covariate (Pre-attitude)	1432.27	1	1432.27	63.49*
Group	7.12	1	7.12	.32
Error	2075.30	92	22.56	
Total	3534.45	95		

$p < .05$

The results of the ANCOVA were presented in Table 2. The results of the statistical analysis indicated that there was not a statistically significant difference between experimental and control groups after controlling for the effect of pre attitude scores toward teaching profession ; F (1, 92) = .32, p = .58.

2.5. The difference between experimental (Facebook) and control groups (no Facebook) in course satisfaction scores at the end of the experiment

In order to compare course satisfaction levels for experimental and control group at the end of the study, an independent sample t-test was conducted. The results of the analysis indicated that there were no statistically significant mean differences for experimental group (M = 52.69, SD = 7.11) and control group (M = 52.57, SD = 7.24), in satisfaction scores at the end of the experiment, t (96) = .08, p = .94.

2.6. The difference between experimental (Facebook) and control groups (no Facebook) in achievement scores at the end of the experiment

An independent-samples t-test was conducted to compare achievement scores of students for experimental group and control group. There was no significant mean difference in achievement scores for experimental group (M = 81.04, SD = 11.76) and control group (M = 80.76, SD = 9.38), t (96) = .13, p = .89.

3. Discussion

The results of the current study indicated that Facebook did not have any significant effect on students' attitudes towards their teaching profession. The study also proved that Facebook had no effect on students' achievement scores and course satisfaction levels. Both experimental and control groups showed similar levels of satisfaction and achievement at the end of the experiment. In the literature, there is no such study about the influence of Facebook on pre-service teachers' attitudes towards teaching profession, course satisfaction levels and academic achievement scores. However in a similar study that was aimed to understand the effectiveness of technology enhanced blended learning environment in comparison to traditional instruction, Delialioglu and Yildirim (2007) found no significant mean difference in attitudes, satisfaction and achievement for experimental and control groups. Although Baldwin, Bedell and Johnson (1997) proved that Friendship Networks affected students' attitudinal beliefs, satisfaction and grades, the current study showed that networking on Facebook did not have any effect on attitudes, satisfaction and grades. In the literature, Facebook is considered to be utilized in education according to initial surveys; however there were some concerns about privacy issues and possible distractions of using social networks for "school work". Insignificant mean differences observed from the current study may be attrıbuted to the distractors of Facebook. In this respect, Taranto and Abbondanza (2009) argued the misuse of Facebook for academic purposes and suggested social networks that were specifically designed for academic purposes.

The current study had some limitations. First, there might have been interaction between the members of experimental group and control group which might have threated internal validity. Second, the study utilized quasi experimental design where there was no random assignment. Hence it was not able to be assumed that the groups were equal at the beginning of the study. Lastly, students who belong to experimental group (Facebook users) might have used each other's Facebook account which cannot be controlled.

References

Ajjan, H., & Hartshorne, R. (2008). Investigating faculty decisions to adopt Web 2.0 technologies: Theory and empirical tests. *The Internet and Higher Education*, *11*(2), 71–80.

Aşkar, P., & Erden, M. (1987). Öğretmenlik Mesleğine Yönelik Tutum Ölçeği. *Çağdaş Eğitim*, (121), 8–11.

Baldwin, T. T., Bedell, M. D., & Johnson, J. L. (1997). The Social Fabric of a Team-Based M.B.A. Program: Network Effects on Student Satisfaction and Performance. *The Academy of Management Journal*, *40*(6), 1369-1397.

Bosch, T. E. (2009). Using online social networking for teaching and learning: Facebook use at the University of

Cape Town. *Communicatio*, *35*(2), 185–200.

Boyd, Danah M., & Ellison, N. B. (2007). Social Network Sites: Definition, History, and Scholarship. *Journal of Computer-Mediated Communication*, *13*(1), 210–230.

Bruner, J. (1996). *Culture of education*. Cambridge, MA: Harvard University Press.

Delialioglu, O., & Yildirim, Z. (2008). Design and development of a technology enhanced hybrid instruction based on MOLTA model: Its effectiveness in comparison to traditional instruction. *Computers & Education*, *51*(1), 474–483.

ECTS Info Package. (2013). Anadolu Info Package. Retrieved March 16, 2013, from http://abp.anadolu.edu.tr/?page=dersler&inner=dersTanimi&dersKod=%C3%96MB103&lisan=01&dyy=1&birimKod=5204060100&st=008&lang=1

Einspar, M. (2010). Using Facebook in Education | Suite101.com. Retrieved June 3, 2012, from http://www.suite101.com/content/using-facebook-in-education-a312574

Ellison, N., Steinfield, C., & Lampe, C. (2007). The Benefits of Facebook "Friends:" Social Capital and College Students' Use of Online Social Network Sites. *Journal of Computer-Mediated Communication*, *12*(4), 1143–1168.

Facebook Newsroom. Retrieved March 16, 2013, from http://newsroom.fb.com/Key-Facts

Horizon Report: 2007. Austin, Texas: The New Media Consortium. Retrieved from March 2, 2013 from http://www.nmc.org/pdf/2007_Horizon_Report.pdf

Jacobs, S. (2008). The Facebook Classroom: 25 Facebook Apps That Are Perfect for Online Education - College Degree.com. Retrieved March 16, 2013, from http://www.collegedegree.com/library/college-life/15-facebook-apps-perfect-for-online-education

Johnson, D. W., & Johnson, R. T. (1984). Structuring Groups for Cooperative Learning. *Journal of Management Education*, *9*(4), 8-17.

Kirschner, P., Strijbos, J.-W., Kreijns, K., & Beers, P. (2004a). Designing electronic collaborative learning environments. *Educational Technology Research and Development*, *52*(3), 47–66.

Kirschner, P., Strijbos, J.-W., Kreijns, K., & Beers, P. (2004b). Designing electronic collaborative learning environments. *Educational Technology Research and Development*, *52*(3), 47–66.

Lockyer, L., & Patterson, J. (2008). Integrating Social Networking Technologies in Education: A Case Study of a Formal Learning Environment. In *Proceedings of the 2008 Eighth IEEE International Conference on Advanced Learning Technologies* (pp. 529–533). IEEE Computer Society.

Mason, R. (2006). Learning technologies for adult continuing education. *Studies in Continuing Education*, *28*(2), 121-133.

Mazer, J., Murphy, R., & Simonds, C. (2007). I'll See You On "Facebook": The Effects of Computer-Mediated Teacher Self-Disclosure on Student Motivation, Affective Learning, and Classroom Climate. *Communication Education*, *56*(1), 1–17.

Munoz, C., & Towner, T. (2009). Opening Facebook: How to Use Facebook in the College Classroom., *Society for Information Technology & Teacher Education International Conference 2009* (pp. 2623–2627). Charleston, SC, USA: AACE. Retrieved from http://www.editlib.org/p/31031

Ophus, J. D., & Abbitt, J. T. (2009). Exploring the potential perceptions of social networking systems in university courses.*Journal of Online Learning and Teaching*, *5*(4), 639–648.

Ozkan, B., & McKenzie, B. (2008). Social Networking Tools for Teacher Education. In K. McFerrin, R. Weber, R. Carlsen, & D. A. Willis (Eds.), *Society for Information Technology & Teacher Education International Conference 2008* (pp. 2772–2776). Las Vegas, Nevada, USA: AACE. Retrieved from http://www.editlib.org/p/27640

Pempek, T., Yermolayeva, Y., & Calvert, S. (2009). College students' social networking experiences on Facebook. *Journal of Applied Developmental Psychology*, *30*(3), 227–238.

Puzziferro, M. (2008). Online Technologies Self-Efficacy and Self-Regulated Learning as Predictors of Final Grade and Satisfaction in College-Level Online Courses. *American Journal of Distance Education*, *22*(2), 72–89.

Roblyer, M., McDaniel, M., Webb, M., Herman, J., & Witty, J. (2010). Findings on {Facebook} in Higher Education: A Comparison of College Faculty and Student Uses and Perceptions of Social Networking Sites. *The Internet and Higher Education*, *13*(3), 134–140.

Russell, M., Bebell, D., O'Dwyer, L., & O'Connor, K. (2003). Examining Teacher Technology Use: Implications for Preservice and Inservice Teacher Preparation. *Journal of Teacher Education*, *54*(4), 297-310.

Socialbakers. (2012). Turkey Facebook Statistics by Countries | Socialbakers. Retrieved March 16, 2013, from http://www.socialbakers.com/facebook-statistics/turkey

Stutzman, F. (2006). An Evaluation of Identity-Sharing Behavior in Social Network Communities. *Journal of the International Digital Media and Arts Association*, *14*, 2006.

Taranto, G., & Abbondanza, M. (2009). Powering students up. *Principal Leadership*, *10*(4), 38–42.

Violino, B. (2009). The Buzz on Campus: Social Networking Takes Hold. *Community College Journal*, *79*(6).

Voithofer, R. (2007). Web 2.0: What is it and how can it apply to teaching and teacher preparation? Presented at the American Educational Research Association Conference.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press

Wang, Q. (2008). A generic model for guiding the integration of ICT into teaching and learning. *Innovations in Education and Teaching International*, *45*(4), 411–419.

Wang, Q., Woo, H. L., Quek, C. L., Yang, Y., & Liu, M. (2012). Using the Facebook group as a learning management system: An exploratory study. *British Journal of Educational Technology*, *43*(3), 428–438.

Wenger, E. (1998). *Communities of Practice: Learning, Meaning, and Identity (Learning in Doing: Social, Cognitive and Computational Perspectives)*. Cambridge University Press.